WHAT IS CLAIMED IS;

1. A linear motor system comprising:

a first linear motor having a primary side being mounted to either one of first and second movable elements which are relatively movable with respect to each other; and

a secondary linear motor having a secondary side mounted to said one of the first and second movable elements so as to extend in the relatively movable direction to be continuous to said primary side of the first linear motor,

said second linear motor having a primary side mounted to another one of the first and second movable elements, and

said first linear motor having a secondary side mounted to said another one of the first and second movable elements so as to extend in the relatively movable direction to be continuous to said primary side of the second linear motor.

2. A linear motor system according to claim 1, wherein said first and second linear motors are composed of linear induction motors, respectively, in which the secondary sides of the respective linear induction motors are arranged so as to oppose to each other.

3. A linear motor system according to claim 1, wherein said first and second linear motors are composed of linear pulse motors, respectively, in which the secondary sides of the respective linear pulse motors are arranged so as to oppose to each other.

4. A linear motor system according to claim 1, wherein said first and second movable elements are outer and inner rail members which are relatively movably fitted to each other and said first and second linear motors are arranged between the outer and inner rail members.

5. A driving apparatus comprising:

first and second movable elements which are relatively movable with respect to each other; and

a driving unit for giving driving power to said first and second movable elements,

said driving unit being comprising a linear motor system, which comprises:

a first linear motor having a primary side being mounted to either one of the first and second movable elements which are relatively movable with respect to each other; and

a secondary linear motor having a secondary side mounted to said one of the first and second movable

elements so as to extend in the relatively movable direction to be continuous to said primary side of the first linear motor,

said second linear motor having a primary side mounted to another one of the first and second movable elements, and

said first linear motor having a secondary side mounted to said another one of the first and second movable elements so as to extend in the relatively movable direction to be continuous to said primary side of the second linear motor.

6. A driving apparatus according to claim 5, further comprising first and second guide units for guiding said second movable element in the relatively movable direction with respect to the first movable element, said first guide unit being provided for said first movable element and said second guide unit being provided for said second movable element, and wherein said first linear motor generates a thrust force at a position substantially the same position of the first guide unit in said relatively movable direction, and said second linear motor generates a thrust force at a position substantially the same position of the second guide unit in said relatively movable direction.

7. A driving apparatus according to claim 6, wherein said primary side of the first linear motor is operatively connected to said first movable element, said first guide unit is fixed to the first movable element at a portion in a vicinity of the primary side of the first linear motor in said relatively movable direction, and said primary side of the second linear motor is operatively connected to said second movable element, and said second guide unit is fixed to the second movable element at a portion in a vicinity of the primary side of the second linear motor in said relatively movable direction.

8. A driving apparatus according to claim 5, wherein said first and second linear motors are composed of linear induction motors, respectively, in which the secondary sides of the respective linear induction motors are arranged so as to oppose to each other.

9. A driving apparatus according to claim 5, wherein said first and second linear motors are composed of linear pulse motors, respectively, in which the secondary sides of the respective linear pulse motors are arranged so as to oppose to each other.

10. A driving apparatus according to claim 5, wherein said first and second movable elements are outer and inner

rail members which are relatively movably fitted to each other and said first and second linear motors are arranged between the outer and inner rail members.

11. A driving apparatus according to claim 10, wherein said inner rail member includes a first inner rail and a second inner rail which are assembled to be relatively movable.

12. A driving apparatus according to claim 5, wherein said first movable element is a flat rectangular base and said second movable element is a flat rectangular table, said base and table being assembled to be slidable to each other.